REMARKS/ARGUMENTS

The Office Action mailed October 2, 2003 has been reviewed and carefully considered. Claims 1 and 8 have been amended. Claims 1-14 are pending in this application, with claims 1 and 8 being the only independent claims. Reconsideration of the above-identified application, as herein amended and in view of the following remarks, is respectfully requested.

In the Office Action mailed October 2, 2003, claims 1-14 stand rejected under 35 U.S.C. §103 as obvious over U.S. Patent No. 5,831,976 (Lin) in view of U.S. Patent No. 5,361,258 (Arnold).

Before discussing the cited prior art and the Examiner's rejections of the claims in view of that art, a brief summary of the present invention is appropriate. The present invention relates to dynamic apportionment of channels in a multiplexed radio system with a plurality of base stations having overlapping coverage areas. A centralized set of information is assembled indicative of interference among the base stations and or mobile stations. A slot or channel in which the base stations interfere with one another may be assigned as "owned" by one of the base stations and "avoided" by the other base stations. A slot or channel on which two base stations would interfere with each other but is not assigned as owned, may be assigned as "shared" (see page 4, lines 8-12 and page 8, lines 5-10).

When a slot is to be allocated for communication between a base station and a mobile station, the slots owned by the base station are first measured (path-loss). If such a slot is found with acceptable path loss, then the communication is assigned to it. If no acceptable owned slots are found, the shared slots are measured. If a shared slot with acceptable loss is found, it is used. Finally, if no shared or owned slots are found, the avoided slots may be measured (see page 4, lines 12-20 and page 8, line 11 to page 9, line 4).

Accordingly, the present invention first determines a classification for each channel according to the probability of interference at the channels with other base stations in the communication system. Channels are then allocated according to (1) the classification and (2) a desired quality class of transmission.

It is respectfully submitted that independent claims 1 and 8 are specifically drawn to preventing interference between a base stations and other base stations within one communication system. To emphasize this, independent claims 1 and 8 have each been amended to recite predetermining, for each base station in the communication system, a classification for each channel

according to the probability of interference at the channel with other base stations of the plurality of base stations in the communication system.

Lin discloses a method and apparatus for time sharing a radio communication channel. As stated in the Office Action, Lin discloses a radio communication system having a plurality of base stations 116 (see col. 3, lines 55-59 of Lin). The base stations 116 communicate with portable subscriber units 122 (col. 4, lines 4-6). Channel sharing is performed by time division duplex or frequency division duplex (col. 4, lines 38-57).

The Examiner states that col. 5, lines 14-58 of Lin discloses that some base stations are susceptible of being interfered with by other base stations. However, this particular section of Lin discloses that the transmitter 202 and the receiver 206 of one base station 116 may interfere with each other (see especially col. 5, lines 18-21). Lin does not disclose that these interfere with other base stations. In any event, the Office Action acknowledges that Lin fails to teach or suggest "predetermining, for each base station, a classification for each channel according to the probability of interference at the channel with other base stations of the plurality of bases stations" and "allocating on request a channel according to the predetermined classification and a desired quality class of transmission", as expressly recited in independent claims 1 and 8.

Arnolds fails to teach or suggest what Lin lacks. Arnold discloses a beacon detection system for sharing spectrum between wireless communication systems and fixed microwave systems. Accordingly, Arnold is concerned with interference between two different communication systems.

Fig. 1 of Arnold discloses a wireless communication system 5 with base stations (ports) and mobile transceivers (portable). Through time division multiple access (TDMA), each portable can access the port (see col. 10, lines 54-63 of Arnold). Fig. 2 of Arnold shows a situation in which the ports and portables of the wireless communication system share frequency spectrum with a point-to-point microwave system. The microwave system includes towers 201, 202 which communicate at frequencies f_{R1} and f_{R2} (col. 12, lines 45-53). To share the spectrum with the microwave system, the ports and portables of the wireless communication system cannot transmit at those frequencies (col. 13, lines 1-7). To avoid interference, each tower of the microwave system transmits a beacon signal to protect its corresponding receiver frequency (col. 13, lines 7-11).

As stated above, Arnold discloses a method and system for preventing interference between two separate communication systems. The Examiner states in the Office Action that col.

12, lines 45-67 and col. 13, lines 1-42 of Arnold discloses the step of predetermining, for each base station, a classification for each channel according to the probability of interference at the channel with other base stations of the plurality of base stations. As stated above, both independent claims 1 and 8 recite that the predetermined classification is based on interference between base stations within one communication system. However, these portions of Arnold disclose only that the antennas of the microwave system transmit beacon signals which are received by the ports and portables of the wireless communication system so that the ports and portables can avoid using those frequencies used by the microwave system. Accordingly, Arnold does not teach or suggest determining interference with other base stations within the same communication system. Rather, Arnold teaches avoiding interference between two separate communication systems.

Furthermore, Arnold does not disclose assigning channels based on a desired quality class of transmission, as expressly recited in independent claims 1 and 8. According to Arnold, the channel either interferes with the other system or does not interfere with the other system, i.e., either cannot or can be used. Within the wireless communication system of Arnold, there is no determination of desired quality class of transmission.

For all of the above reasons, it is respectfully submitted that independent claims 1 and 8 are allowable over Lin in view of Arnold.

Dependent claims 2-7 and 9-14, being dependent on independent claims 1 and 8, are deemed allowable for the same reasons expressed above with respect to independent claims 1 and 8.

The application is now deemed to be in condition for allowance and notice to that effect is solicited.

Respectfully submitted,
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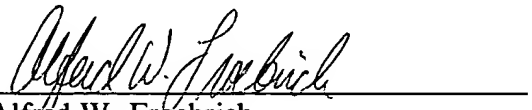
By 

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